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EXAMINER	
KIM, DAVID S	

ART UNIT	PAPER NUMBER
2633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/474,299	SCHEMMANN ET AL.	
	Examiner	Art Unit	
	David S. Kim	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6 and 8* is/are pending in the application.

4a) Of the above claim(s) *3,6 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 1999 and 15 September 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. **Claims 3, 6, and 8** are directed to inventions that are independent or distinct from the invention originally claimed and elected for the following reasons:

Applicant is reminded that this application is under a restriction requirement. In a previous correspondence filed on 10 March 2003, Applicant elected **Species 4** shown in Fig. 11. The original version of claims 3, 6, and 8 did not read on this elected Species 4. The present version of claims 3, 6, and 8 still does not read on this elected Species 4.

Regarding claim 3, claim 3 includes a limitation that is directed to an invention that is distinct from the invention originally claimed and elected, Species 4. Note parent claim 1. Claim 3, via parent claim 1, is understood to correspond to converting fiber hub 791 in Fig. 11. Claim 3 reads, "multiple carrier signals of the input light beam have radio frequencies in a frequency band extending at least between approximately 5 and 45 MHz." This limitation appears to direct claim 3 to read on **non-elected Species 1, Fig. 1**. In particular, see Fig. 1, p. 25, middle paragraph. Notice that the input light beams on input optical paths 170-174 in Fig. 1 have radio frequencies in a frequency band between 5 and 50 MHz.

In contrast, this limitation conflicts with the frequency band of 100-200 MHz shown in Species 4, Fig. 11. In particular, see Fig. 11, p. 39, 2nd full paragraph, p. 40, 2nd full paragraph. Notice that the input light beam of input optical fiber 802 in Fig. 11 has radio frequencies in a frequency band of 100-200 MHz, not between approximately 5 and 45 MHz. Additionally, notice that the claim language includes reference characters that correspond to Fig. 1, Species 1 (i.e., 216-219).

Regarding claims 6 and 8, claims 6 and 8 both include a limitation that is directed to an invention that is distinct from the invention originally claimed and elected, Species 4. Note the combining means in claim 6 and the routing means for combining in claim 8. As previously

noted in an Office Action (mailed on 07 February 2003, p. 2, item 1), Species 4, Fig. 11, does not show this combining means or this routing means for combining. Rather, the combining means in claim 6 appears to direct claim 6 to read on **non-elected Species 1, Fig. 1**. Additionally, notice that the claim language in claim 6 includes reference characters that correspond to Fig. 1, Species 1 (e.g., 215-220, 223). Similarly, the routing means for combining in claim 8 appears to direct claim 8 to read on **non-elected Species 1, Fig. 1**. Additionally, notice that the claim language in claim 8 includes reference characters that correspond to Fig. 1, Species 1 (e.g., 215-220, 223).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, **claims 3, 6, and 8 are withdrawn from consideration** as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

2. Drawings were received on 15 September 2004. Applicant's compliance with the objections raised in the previous Office Action (mailed on 15 June 2004) is noted and appreciated. Sheets 1/11 and 3/11 are approved. However, other drawings (some of those filed on 29 December 1999 and 15 September 2004) are still disapproved. Upon further review of the drawings and the specification together, the Office has noticed numerous instances of missing reference characters in the drawings, inaccurate reference characters, instances of missing reference characters in the specification, and conflicting usages of reference characters. Some examples include:

In Fig. 5, reference characters 373-376, 380, and 381 are missing from the specification.

In Fig. 6, reference character 401 is missing from the specification.

In Fig. 7, there are two conflicting instances of reference character 554. The instance of 554 from optical splitter 552 appears to be the correct one. See p. 35-36, bridging paragraph.

In Fig. 7, reference character 571 is missing from the specification.

A thorough and careful review of the drawings and the specification together is strongly encouraged.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant's compliance with the objections raised about the specification in the previous Office Action (mailed on 15 June 2004) is noted and appreciated. However, upon further review of the drawings and the specification together, the Office has noticed numerous instances of inaccurate reference characters, apparent misspellings, and incongruities with the drawings. Some examples include:

In the original specification, p. 35, 2nd full paragraph, "536-538" is used where – 536-537 – may be intended. See Fig. 7.

In the original specification, p. 35, 3rd full paragraph, "optical connectors 540-541" is used where – optical connectors 542-543 – may be intended. See Fig. 7.

In the original specification, p. 36, l. 5-8, "forward multicarrier electronic" is used where – return multicarrier electronic – may be intended. See Fig. 7.

In the original specification, p. 36, 2nd full paragraph, "HCU 606-608" is used where – HCU 604-605 – may be intended. See Fig. 8.

In Paper No. 20 (filed on 11 May 2004), p. 4-5, bridging paragraph, 1st line, "figurers 2" is used where – figure 2 – may be intended.

In Paper No. 20 (filed on 11 May 2004), p. 5, middle paragraph, "214" is used where – 213 – may be intended. See Fig. 1.

A thorough and careful review of the drawings and the specification together is strongly encouraged.

Claim Objections

5. Applicant's compliance with the objections to the claims in the previous Office Action (mailed on 15 June 2004) is noted and appreciated. Accordingly, these objections are withdrawn.

6. **Claim 1** is objected to because of the following informalities:

There appears to be a lack of consistent language regarding antecedent references. In particular, line 8 cites, "output light beam *modulated by* an output carrier signal." Line 20 cites, "current signal *modulated by* the higher frequency output carrier signal." However, the 2nd-3rd to last lines cite, "current signal *carrying* the higher frequency carrier signal." As a remedy, Examiner suggests one of two adjustments. One recommended adjustment is to change this cited instance of "*carrying*" to "*modulated by*." Another recommended adjustment is to change these two cited instances of "*modulated by*" to "*carrying*."

Additionally, in lines 12-13, "said optical upconverter means connecting said input optical path to said output optical path" is used where – said optical upconverter means connecting said input optical paths to said output optical paths – may be intended.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 2** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, due to the new amendments to parent claim 1 (filed on 15 September 2004), child claim 2 is indefinite for a variety of reasons:

In l. 2-3, the antecedent basis for "the input optical path" is unclear. That is, the new amendment of a "plurality of input optical paths" to parent claim 1 renders the reference "the input optical path" in child claim 2 indefinite; which "input optical path" of this "plurality of input optical paths" is referenced?

In l. 4-5, similar to the indefiniteness of "the input optical path" above, the antecedent basis for "the output optical path" is unclear.

Throughout the rest of claim 2, there are references to "additional input optical paths," "additional input light beams," "additional input carrier signals," "additional information signal," "additional respective input carrier signals," "additional output optical paths," "additional output light beam," and "additional output carrier signal." In one reading of these "additional" limitations, these references may introduce optical paths, light beams, and carrier signals that are additional to *just one* of the plurality of such items introduced by the new "plurality" amendments to parent claim 1. In another reading of these "additional" limitations,

these references may introduce optical paths, light beams, and carrier signals that are additional to the *entire plurality* of such items introduced by the new "plurality" amendments to parent claim 1. In other words, are these "additional" limitations *redundantly* introducing optical paths, light beams, and carrier signals that the new "plurality" amendments to parent claim 1 *already* introduced? Or do these "additional" limitations introduce optical paths, light beams, and carrier signals *in addition to* the "plurality" of such items that the new "plurality" amendments to parent claim 1 already introduced? This confusion indicates that claim 2 fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

In view of a first reading of Wright

11. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright (U.S. Patent No. 5,841,468).

Regarding claim 1, Wright discloses:

Optical apparatus, comprising:

a plurality of optical input paths, each of said plurality of input optical paths (service lines 18 from subscriber sites to service sites 16 in Fig. 1, col. 5, lines 1-3, col. 11, lines 26-27) connected to a corresponding one of a plurality of receiver nodes (subscriber sites on service lines 18 in Fig. 1) and carrying a corresponding input light beam modulated by an input carrier signal modulated by an information signal, the input carrier signal having a radio frequency (col. 2, lines 3-7);

a plurality of optical output paths, each of said plurality of output optical paths (receive/return cables 30 from service sites 16 to headend 12 (distribution hubs 14 are optional, col. 2, lines 39-45, 59-61) in Fig. 1, col. 5, lines 1-3, col. 11, lines 26-27) connected to one of an array of head-end node receivers and carrying a corresponding output light beam modulated by an output carrier signal modulated by the same information signal as the corresponding input carrier signal, the output carrier signal having a higher (col. 4, lines 22-31, col. 9, lines 48-52) radio frequency than the input carrier signal; and

optical upconverter (service sites 16 in Level 3 of Fig. 1 via up converters in Figs. 2A and 3, equivalent to Applicant's fiber hub 791 in Fig. 11 in that both have structural components that enable communication with a headend, both functioning as an intermediary stage in their respective networks) means for respectively converting the plurality of input light beams into the plurality of output light beams, said optical upconverter means connecting said input optical path to said output optical path, the optical upconverter means including:

electronic upconverter (up converters in Figs. 2A and 3, equivalent to Applicant's frequency converter 821 in Fig. 11 in that both appear to be standard electrical upconverters, both functioning to upconvert input electrical input signals into output electrical input signals in a higher frequency band) means for converting the input electronic current signal modulated by the input carrier signal modulated by the information signal into an output electronic current signal modulated by the higher frequency output carrier signal modulated by the same information signal; and

optical transmitter means (transmitter 50, col. 8, lines 39-41, equivalent to Applicant's transmitter 822 in Fig. 11 in that both appear to be standard optical transmitters, both functioning to convert electrical input signals into optical output signals) for converting the output electronic current signal carrying the higher frequency carrier signal into the output light beam carrying the same higher frequency output carrier signal.

Wright does not expressly disclose:

the optical upconverter means including

optical receiver means for converting each of the input light beams carrying the corresponding input carrier signal into an input electronic current signal carrying the same input carrier signal.

However, such optical receiver means are extremely common and conventional in the art. Additionally, note that Wright discloses other instances of such optical receiver means (e.g., col. 5, l. 6-7; col. 8, l. 39-41; col. 9, l. 59; col. 11, l. 1-3, equivalent to Applicant's receiver 820 in Fig. 11 in that both appear to be standard optical receivers, both functioning to convert optical input signals into electrical output signals) explicitly employed at other locations of the optical apparatus of Wright. Wright strongly suggests implementing such optical receiver means by the disclosure of the input optical paths (service lines 18 from subscriber sites to service sites 16 in

Fig. 1; col. 5, lines 1-3, col. 11, lines 26-27) and the electronic components within the optical upconverter means (service sites 16 in Figs. 2A and 3), including the electronic upconverter means (up converters in Figs. 2A and 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement such optical receiver means in the optical upconverter means of Wright. One of ordinary skill in the art would have been motivated to do this since there is a need for the electronic components within the optical upconverter means of Wright to interact with the input light beams on the input optical paths; optical receiver means that perform optical to electrical conversion are the conventional means for meeting this need (Wright, e.g., col. 5, l. 6-7; col. 8, l. 39-41; col. 9, l. 59; col. 11, l. 1-3).

12. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claim 1 above, and further in view of Pidgeon (U.S. Patent No. 5,153,763).

Regarding claim 2, Wright discloses:

The apparatus of claim 1, further comprising:

an input coupler configured to connect an input optical fiber to the input optical path;

an output coupler configured to connect an output optical fiber to the output optical path (input and output couplers are conventional for connecting fibers and paths); and

one or more additional input optical paths (service lines 18 from subscriber sites to service sites 16 in Fig. 1; col. 5, lines 1-3, col. 11, lines 26-27) configured to provide a plurality of additional input optical paths carrying respective additional input light beams modulated by respective additional input carrier signals each modulated by a respective additional information signal, the additional respective input carrier signals having radio frequencies (col. 2, lines 3-7), and

one or more additional output optical paths (receive/return cables 30 from service sites 16 to headend 12 (distribution hubs 14 are optional, col. 2, lines 39-45, 59-61) in Fig. 1; col. 5, lines 1-3, col. 11, lines 26-27) each configured to carry a respective additional output light beam

modulated by respective additional output carrier signal modulated by the same information signal as corresponding additional input carrier signal, the respective additional output carrier signal having a higher (col. 4, lines 22-31, col. 9, lines 48-52) radio frequency than the corresponding additional input carrier signal, wherein

the optical upconverter means (service sites 16 in Level 3 of Fig. 1 via up converters in Figs. 2A and 3) is further configured to convert the additional input light beam into the additional output light beam.

Wright does not expressly disclose the following limitations (but Pidgeon does):

An apparatus wherein

a wavelength of the input or output light beams is between 1250 and 1360 nm or between 1500 and 1610 nm (Pidgeon, col. 3, lines 27-30), and one of the following conditions is true

a radio frequency of the output carrier signal is at least approximately 2 times higher than a radio frequency of the input carrier signal (Pidgeon, Figs. 2-3),

the radio frequency of the input carrier signal is below 100 MHz (Pidgeon, Figs. 2-3) and the radio frequency of the output carrier signal is above 200 MHz,

the radio frequency of the output carrier signal is between approximately 400 and 900 MHz (Pidgeon, Figs. 2-3),

the radio frequency of the output carrier signal is more than approximately 40 times higher than the frequency of the input carrier signal, and

the radio frequency of the input carrier signal is approximately between 5 and 65 MHz and the radio frequency of the output carrier signal is at least 400 MHz (Pidgeon, Figs. 2-3).

Rather, Wright does not discuss the transmission details of its CATV transmission method to this extent. However, Pidgeon does teach a related CATV transmission method that incorporates these limitations. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the transmission method of Pidgeon to the transmission method of Wright. One of ordinary skill in the art would have been motivated to do this to reduce distortion (Pidgeon, abstract).

In view of a second reading of Wright

13. **Claims 1-2** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Pidgeon (U.S. Patent No. 5,153,763).

Regarding claim 1, Wright discloses:

Optical apparatus, comprising:

a plurality of optical input paths, each of said plurality of input optical paths (receive/return fiber optic cables 30 from service sites 16 to distribution hubs 14 in Fig. 1, col. 5, lines 1-3, col. 11, lines 26-27) connected to a corresponding one of a plurality of receiver nodes (service sites 16 in Fig. 1) and carrying a corresponding input light beam modulated by an input carrier signal modulated by an information signal, the input carrier signal having a radio frequency (col. 2, lines 3-7);

a plurality of optical output paths, each of said plurality of output optical paths (receive/return fiber optic cables 30 from distribution hubs 14 to headend 12 in Fig. 1, col. 5, lines 1-3, col. 11, lines 26-27) connected to one of an array of head-end node receivers and carrying a corresponding output light beam modulated by an output carrier signal modulated by the same information signal as the corresponding input carrier signal; and

optical converter (distribution hubs 14 in Level 2 of Fig. 1 via up converters in Figs. 2B and 4, equivalent to Applicant's fiber hub 791 in Fig. 11 in that both have structural components

that enable communication with a headend, both functioning as an intermediary stage in their respective networks) means for respectively converting the plurality of input light beams into the plurality of output light beams, said optical converter means connecting said input optical path to said output optical path, the optical converter means including:

optical receiver means (receiver 52 in Figs. 2B and 4 for receiving signals from service sites 16 in Fig. 1, col. 8, l. 39-41, equivalent to Applicant's receiver 820 in Fig. 11 in that both appear to be standard optical receivers, both functioning to convert optical input signals into electrical output signals) for converting each of the input light beams carrying the corresponding input carrier signal into an input electronic current signal carrying the same input carrier signal;

electronic upconverter (up converters in Figs. 2A and 3, equivalent to Applicant's frequency converter 821 in Fig. 11 in that both appear to be standard electrical upconverters, both functioning to upconvert input electrical input signals into output electrical input signals in a higher frequency band) means for converting the input electronic current signal modulated by the input carrier signal modulated by the information signal into an output electronic current signal modulated by the same information signal; and

optical transmitter means (transmitter 50 in Figs 2B and 4 for transmitting signals to headend 12 in Fig. 1, col. 8, lines 39-41, equivalent to Applicant's transmitter 822 in Fig. 11 in that both appear to be standard optical transmitters, both functioning to convert electrical input signals into optical output signals) for converting the output electronic current signal into the output light beam.

Wright does not expressly disclose:

each of the plurality of optical output paths carrying the corresponding output light beam modulated by the output carrier signal, *the output carrier signal having a higher radio frequency than the input carrier signal*;

the optical converter means being optical *up*converter means and including:

electronic upconverter means for converting the input electronic current signal modulated by the input carrier signal modulated by the information signal into an output electronic current signal *modulated by the higher frequency output carrier signal* modulated by the same information signal; and

optical transmitter means for converting the output electronic current signal *carrying the higher frequency carrier signal* into the output light beam *carrying the same higher frequency output carrier signal.*

Rather, Wright discusses an output carrier signal having a *same* radio frequency band as an input carrier signal (note the matching ranges in transmitter 50 and receiver 52 in Figs. 2B and 4), wherein the frequency band of the CATV transmissions of Wright is greater than one octave. However, Pidgeon discusses that such CATV transmissions that are greater than one octave are susceptible to the negative effects of higher order intermodulation distortion (col. 1, l. 33-38, 60-63). Pidgeon then discloses a transmission method for combating this distortion. This method incorporates the italicized limitations that Wright does not expressly disclose above. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the transmission method of Pidgeon to the transmission method of Wright. One of ordinary skill in the art would have been motivated to do this to reduce distortion (Pidgeon, abstract).

Regarding claim 2, Wright in view of Pidgeon discloses:

The apparatus of claim 1, further comprising:

an input coupler configured to connect an input optical fiber to the input optical path;

an output coupler configured to connect an output optical fiber to the output optical path (input and output couplers are conventional for connecting fibers and paths); and

one or more additional input optical paths (receive/return fiber optic cables 30 from service sites 16 to distribution hubs 14 in Fig. 1, col. 5, lines 1-3, col. 11, lines 26-27) configured to provide a plurality of additional input optical paths carrying respective additional input light beams modulated by respective additional input carrier signals each modulated by a respective additional information signal, the additional respective input carrier signals having radio frequencies (col. 2, lines 3-7), and

one or more additional output optical paths (receive/return fiber optic cables 30 from distribution hubs 14 to headend 12 in Fig. 1, col. 5, lines 1-3, col. 11, lines 26-27) each configured to carry a respective additional output light beam modulated by respective additional output carrier signal modulated by the same information signal as corresponding additional input carrier signal, the respective additional output carrier signal having a higher (Pidgeon, abstract) radio frequency than the corresponding additional input carrier signal, wherein

the optical upconverter means (distribution hubs 14 in Level 2 of Fig. 1 via up converters in Figs. 2B and 4) is further configured to convert the additional input light beam into the additional output light beam, and

a wavelength of the input or output light beams is between 1250 and 1360 nm or between 1500 and 1610 nm (Pidgeon, col. 3, lines 27-30), and one of the following conditions is true

a radio frequency of the output carrier signal is at least approximately 2 times higher than a radio frequency of the input carrier signal (Pidgeon, Figs. 2-3),

the radio frequency of the input carrier signal is below 100 MHz (Pidgeon, Figs. 2-3) and the radio frequency of the output carrier signal is above 200 MHz,

the radio frequency of the output carrier signal is between approximately 400 and 900 MHz (Pidgeon, Figs. 2-3),

the radio frequency of the output carrier signal is more than approximately 40 times higher than the frequency of the input carrier signal, and

the radio frequency of the input carrier signal is approximately between 5 and 65 MHz and the radio frequency of the output carrier signal is at least 400 MHz (Pidgeon, Figs. 2-3).

Response to Arguments

14. Applicant's arguments filed on 15 September 2004, with respect to the rejection of **claims 1-2** under Wright have been fully considered but they are not persuasive **in view of the first reading of Wright above**. Applicant presents two salient points.

Regarding the first point, Applicant states,

> "[A]s noted in the Official Action, Wright does not disclose or suggest all the features recited in Applicants' original Claim 4. Therefore, Applicants submit that original Claim 4, and all claims depending therefrom, are not rendered obvious by the asserted prior art for at least the reasons stated above. However, to expedite progress toward an allowance, the language of original Claims 1 and 4, now combined in amended Claim 1, have been amended to more clearly describe and distinctly claim Applicants' invention. Thus, Applicants submit that Wright does not disclose or suggest the structure of Applicants' optical converter 180 now recited in amended Claim 1" (filed on 15 September 2004, p. 24-25, bridging paragraph, emphasis Applicant's).

Examiner respectfully notes that Applicant's arguments fail to comply with 37 CFR 1.111(b) and (c) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references and because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. That is, the arguments do not specifically identify which features of Applicants' original Claim 4 are not disclosed or suggested by Wright. Rather, the arguments generally state, "Wright does not disclose or suggest the structure of Applicants' optical converter 180 now recited in amended Claim 1."

In contrast, the previous rejection and the standing rejection present an obviousness argument, stating,

> "Wright does not **expressly** disclose:
> **the optical upconverter means including**
> **optical receiver means** for converting each of the input light beams carrying the corresponding input carrier signal into an input electronic current signal carrying the same input carrier signal.
>
> However, such optical receiver means are extremely common and conventional in the art. Additionally, note that **Wright discloses other instances of such optical receiver means** (e.g., col. 5, l. 6-7; col. 8, l. 39-41; col. 9, l. 59; col. 11, l. 1-3) explicitly employed at other locations of the optical apparatus of Wright. **Wright strongly suggests implementing such optical receiver means** by the disclosure of the input optical paths (service lines 18 from subscriber sites to service sites 16 in Fig. 1; col. 5, lines 1-3, col. 11, lines 26-27) and the electronic components within the optical upconverter means (service sites 16 in Figs. 2A and 3), including the electronic upconverter means (up converters in Figs. 2A and 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement such optical receiver means in the optical upconverter means of Wright. One of ordinary skill in the art would have been motivated to do this since there is a need for the electronic components within the optical upconverter means of Wright to interact with the input light beams on the input optical paths; optical receiver means that perform optical to electrical conversion are the conventional means for meeting this need (Wright, e.g., col. 5, l. 6-7; col. 8, l. 39-41; col. 9, l. 59; col. 11, l. 1-3)" (see treatment of claim 1 above, emphasis Examiner's).

Therefore, Examiner finds it difficult to consider Applicant's first point to be persuasive.

Regarding the second point, Applicant states,

> "Applicants also note that Claim 1 is recited in means-plus-function format and remind the Examiner that these claims are to be interpreted in view of the structure disclosed in the specification" (filed on 15 September 2004, p. 24-25, bridging paragraph, emphasis Applicant's).

Examiner appreciates Applicant's reminder. The standing rejections above **in view of the first reading of Wright** further detail which portions of the prior art of record correspond to which means-plus-function limitations.

Summarily, Applicant's arguments are not persuasive **in view of the first reading of Wright above**. Accordingly, Examiner respectfully maintains the standing rejections.

15. Applicant's arguments filed on 15 September 2004, with respect to the rejection of **claims 1-2** under Wright have been considered but are also moot in view of the new ground(s) of rejection **in view of the second reading of Wright**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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DSK

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